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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,272	03/18/2004	Boon Keat Tan	70040133-1	7457

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EXAMINER

YAM, STEPHEN K

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/804,272	Applicant(s) TAN ET AL.	
	Examiner Stephen Yam	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first trim filter located between said light source and said photodetectors must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 10 and 11 are objected to because of the following informalities:

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In Claims 10 and 11, "said first trim filter" lacks proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 2, 7, 9, 10, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claims 1, 2, 7, 9, 10, and 11, the phrase "preferentially" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7, and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hinoda et al. US Patent No. 4,547,074.

Regarding Claim 1, Hinoda et al. teach (see Fig. 1-6) a color sensor for measuring light from a light source (see Col. 1, lines 5-8), said color sensor comprising a plurality of photodetectors (11-14), a plurality of primary color filters (41-44), each primary color filter comprising a layer of material (see Col. 3, lines 33-37) between said light source and a corresponding one of said photodetectors (see Fig. 3), each primary color filter transmitting light in a corresponding band of wavelengths about a characteristic wavelength (cut-off wavelength and higher) (see curve B in Fig. 4 and Col. 4, lines 6-12), and a first trim filter (41) located between said light source and said photodetectors, said first trim filter comprising a layer of material (see Col. 3, lines 21-24) that attenuates light at a first trim wavelength (around 500nm) (see curve A in Fig. 4) between two of said characteristic wavelengths (since the color filters have a cut-off wavelength below the peak transmission of the interference filters, color filters 42 and 44 (which generate curves D2 and D4, respectively, for Fig. 5 when combined with interference filters) must have a cut-off wavelength lower than the peak wavelength of curves D2 and D4, and therefore, the first trim wavelength is between two characteristic wavelengths).

Regarding Claim 9, Hinoda et al. teach (see Fig. 1-6) a method for fabricating a color sensor, comprising providing a substrate (1) having a plurality of photodetectors (11-14), bonding (see Col. 3, lines 21-27), a first trim filter layer (31-34) to said substrate, bonding (see Col. 3, lines 34-37) a color filter layer (41-44) to said first trim filter layer, said color filter layer comprising a plurality of primary color filters (41, 42, 43, 44), each primary color filter comprising a layer of material (see Col. 3, lines 33-37) between said light source and a corresponding one of said photodetectors (see Fig. 3), each primary color filter transmitting light

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in a corresponding band of wavelengths about a characteristic wavelength (cut-off wavelength and higher) (see curve B in Fig. 4 and Col. 4, lines 6-12).

Regarding Claims 2 and 10, Hinoda et al. teach said first trim filter further attenuating light at a second trim wavelength (700nm) (see curve A in Fig. 4), said first trim wavelength being less than one of said characteristic wavelengths (since the 500nm first trim wavelength is less than the ~550nm characteristic wavelength shown in curve B of Fig. 4) and said second trim wavelength being greater than that characteristic wavelength (see Fig. 4).

Regarding Claim 3, Hinoda et al. teach said first trim filter comprising an interference filter (see Col. 3, lines 19-24).

Regarding Claim 4, Hinoda et al. teach a substrate (1) having said photodetectors located therein (see Fig. 3), said first trim layer comprising a first trim filter layer (41-44) on said substrate.

Regarding Claim 5, Hinoda et al. teach said color filters located on said first trim filter layer (see Fig. 3).

Regarding Claim 7, Hinoda et al. teach a second trim filter (42), said second trim filter comprising a layer of material that attenuates light at a second wavelength (below 400nm, since curve D2 in Fig. 5 is associated with the filtering of (42)- see Fig. 4, curve A for attenuation curve of the interference filters) that is different from each of said characteristic wavelengths and said first trim wavelength (see Fig. 5).

Regarding Claim 11, Hinoda et al. teach said first trim filter layer comprising a plurality of transparent layers in which adjacent layers have different indices of refraction (see Col. 3, lines 21-27).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hinoda et al.

Regarding Claim 6, Hinoda et al. teach the sensor in Claim 1, according to the appropriate paragraph above. Hinoda et al. do not teach said color filters located between said first trim filter and said photodetectors. It is well known in the art to provide any order for filters in a color-detection system, as the final detection result is independent of the order of the filters. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide said color filters located between said first trim filter and said photodetectors, in the sensor of Hinoda et al., since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

10. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinoda et al. in view of Sulzbach et al. US Patent No. 3,996,461.

Regarding Claims 8 and 12, Hinoda et al. teach the sensor and method of Claims 7 and 9, according to the appropriate paragraph above. Hinoda et al. do not teach the color filters located between the first and the second trim filter. Sulzbach et al. teach (see Fig. 1-2) a similar sensor having a first trim filter (L, H) and a second trim filter (L", H"), with a color filter (L', H') located

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between the first and second trim filters (see Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the second trim filter such that the color filter is located between the first and second trim filters, as taught by Hinoda et al., in the sensor of Hinoda et al., to more precisely define the desired transmittance and attenuation wavelengths for greater color accuracy and matching.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm:

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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THANH X. LUU
PATENT EXAMINER